—▼ de maximis, inc.

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2 August 2000

Joseph McDowell
Remedial Project Manager
U.S. Environmental Protection Agency—Region III
1650 Arch Street - 3HS21
Philadelphia, Pennsylvania 19103

Re: Comments on the Superfund Program Proposed Plan, Dated June 2000 Crater Resources, Inc. Site, Upper Merion Township, Montgomery Township, Pennsylvania, Dkt. No. III-94-42-DC, Administrative Order on Consent (AOC)

Dear Mr. McDowell:

Provided below are comments prepared by *de maximis, inc.* concerning the "Superfund Proposed Plan, Crater Resources Inc./Keystone Coke Co./Alan Wood Steel Co. Site, Upper Merion Township, Montgomery County, Pennsylvania" (Proposed Plan), dated June 2000. The public comment period for submitting comments on the Proposed Plan closes on 15 August 2000.

de maximis, inc. was contacted by the Respondents to the above-referenced AOC and asked to provide written comments on the Proposed Plan. The Respondents requested an independent and objective opinion from someone previously uninvolved with the site but familiar with the Superfund process. In addition to the Proposed Plan, we reviewed the final Remedial Investigation (RI) Report, the 29 February 2000 draft Feasibility Study (FS) Report, EPA's 16 June 2000 Addendum to the FS Report, and several other site-related documents. We also visited the site.

The following comments also take into account certain clarifications regarding the Proposed Plan that we understand you provided to Tony Bartolomeo during your meeting with Tony on 12 July 2000 and during subsequent conversations. Specifically, we understand that the following clarifications were provided:

- <u>Capping in Areas Other Than Quarry 3</u> Asphalt capping (without a multimedia cap) is acceptable for Quarry 1, Quarry 2 and other affected areas, as long as the asphalt is utilized as part of the land development plans (e.g., parking area construction) and any Pennsylvania ARAR for asphalt construction is met.
- <u>Cap Construction For Alternative S-5</u> A soil cover, rather than a multimedia cap, is required for Quarry 3 under Alternative S-5. EPA considers this appropriate since the contaminated soil and sediment is removed under this alternative.



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The following comments are focused on "big picture" issues, rather than detailed technical comments. We hope these comments are useful to EPA while further considering the most appropriate remedy for this site.

Soil Alternative S-4 (Low Permeability Capping) Should be Selected as the Preferred Remedy Instead of Soil Alternative S-5 (Quarry 3 Removal/ Capping)

The Proposed Plan recommends soil alternative S-5 (Quarry 3 Removal/Low Permeability Capping). However, based on our review, soil alternative S-4 (Low Permeability Capping) appears to be equal to, and in some respects superior to, S-5, even after taking account of the clarifications. When coupled with alternative GW-3 (the groundwater alternative proposed in the Proposed Plan), the S-4/GW-3 combination is protective of human health and the environment, meets ARARs, and is projected to achieve groundwater cleanup goals as quickly as the remedy identified in the Proposed Plan. In addition, it would cost over \$4,000,000 less (based on EPA's revised costs) than EPA's proposed alternative. Therefore, alternative S-4 appears to be the logical choice for the soil remedy. These points are discussed in more detail below.

The primary difference between the two alternatives (S-4 and S-5) is that S-5 includes the removal and off-site disposal of contaminated soils and sediments from Quarry 3. Therefore, the following comparison will primarily focus on Quarry 3.

Alternatives S-4 Appears to Provide Equal or Superior Overall Protection of Human Health and the Environment When Compared to Alternative S-5.

Perhaps the key question concerns the amount of risk reduction and protectiveness that would be achieved by each alternative. The primary remedy selection criterion set forth in the NCP is overall protection of human health and the environment. 40 C.F.R. § 300.430(a). Table 1 of the PRAP summarizes the human health risks at the site, if no remedial action were taken. All risks other than those associated with hypothetical groundwater use would be effectively addressed by preventing direct contact with the contaminated soil and sediment through the use of capping. Both alternatives S-4 and S-5 would be equally effective in this regard. As far as groundwater is concerned, there is no current use of groundwater within the area affected by the site and no reasonable expectation of future groundwater use, considering the availability of public water. Furthermore, the plume has reached a steady state (or is decreasing in areal extent) (p. 1-14 draft FS Report) and would be expected to further shrink once the soil remedy (S-4 or S-5) is implemented. The remaining groundwater question is how long will it take to achieve groundwater cleanup goals under alternative S-4 versus S-5. The results of groundwater modeling presented in the FS indicate that the time to reach groundwater cleanup goals is essentially identical for the two alternatives.

The Proposed Plan indicates that S-4 provides protectiveness through capping by preventing direct contact with affected materials and reducing further leaching of contaminants from soil to the

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groundwater. The Proposed Plan also indicates that S-5 provides a "high level of protectiveness" since portions of the contaminated source areas in the soils would be removed. However, the PRAP does not appear to explain how the removal makes S-5 more protective then S-4. In fact, the FS raises a couple of other areas of risk posed by S-5, which would not be presented by the implementation of S-4.

The first is the short-term risk posed to workers during excavation and to the public through potential truck accidents. An estimated 28,000 cubic yards of contaminated soil/sediment would be transported from the site. This would involve several thousand additional truck trips of contaminated soil/sediment and replacement fill that would not occur under S-4. We understand that some reviewers of the FS at EPA have had some disagreement with the specific details of these risks as presented in the FS; however, it is hard to dispute that additional risks do exist with excavation and off-site transportation remedies and should be factored into EPA's alternatives evaluation. EPA encourages considering real rather than perceived risks. Use of automobiles is frequently cited as an example of an area where perceived risk is far less than actual risk, while the risks from hazardous substance disposal sites is an example of a situation where perceived risk often exceeds actual risk. While it is EPA's duty to reduce risks from hazardous substance contamination to acceptable levels, this should not occur at the cost of increasing real risk through increases of heavy truck traffic, including potential traffic in residential areas.

Traffic risks may be one reason why Congress, in Section 121(b) of CERCLA directed that off-site disposal of hazardous substances is "the least favored alternative." Congress has also expressed concern with remedies which simply transport hazardous substances from one location to another. While there are frequently many good reasons for overriding this Congressional preference and relying upon off-site disposal, the Crater Resources site appears to be a situation where that preference should not be overridden. It appears that moving the materials to another disposal area, in this case, will likely result in a net increased risk, when both sites are considered.

The other area of risk discussed in the FS is associated with the potential migration of contaminated sediments into the bedrock and the underlying aquifer during contaminated sediment removal from the pond areas. The concern, which de maximis shares, is that the tarry layers underlying the ponds currently act as a barrier, minimizing the infiltration of water into the vadose zone (as evidenced by the mere existence of the ponds) and that the disturbance caused by removing the sediments will breech the tarry barriers and allow contaminated sediments to enter bedrock openings and the underlying aquifer. These additional risk factors indicate that, on balance, S-4 represents less risk than S-5.

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Alternatives S-4 Appears to Accomplish the Remedial Action Objectives at Least as Well as Alternative S-5.

Another consideration in our review is the determination if the remedial action objectives, contained in the FS, would be met by implementing alternative S-4 (coupled with groundwater alternative GW-3). EPA does not appear to have modified the remedial action objectives, which appear sound. Consideration of these objectives allows a more systematic comparison of S-4. Each of the remedial action objectives is therefore reviewed below:

Soil/Sediment Remedial Action Objectives

- 1. Limit exposure to soil/sediment which presents an unacceptable risk to human health or the environment.
 - The S-4 multimedia cap/asphalt covers accomplish this objective, as discussed in the FS.
- 2. Limit contact of soil/sediment constituents with other media such as ground water and surface water which may transport the contamination, so that the transport does not create an unacceptable risk to human health or the environment.
 - The S-4 multimedia cap/asphalt covers also accomplish this objective, as discussed in the FS.
- 3. Enable remediation to complement intended reuse of the site for commercial office park purposes to the degree practical.
 - The S-4 and S-5 alternatives are equal in this respect. Note however, that as discussed in the following comment, the redevelopment of the site for commercial office park purposes may be best implemented by employing asphalt capping on Quarry 1, Quarry 2 and other affected areas (to the extent possible considering the recent development at the site).

Surface Water Remedial Action Objectives

- 4. Limit exposure of ecological receptors to affected surface water.
 - The three ponds in Quarry 3 represent the only existing affected surface water. Alternative S-4 (as well as S-5) includes the dewatering of these ponds and capping of Quarry 3, thus removing any exposure of ecological receptors to potentially affected surface water.



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Ground Water Remedial Action Objectives

5. Limit future potential exposure to ingestion of site-related ground water so that the exposure risk level is between 10⁻⁴ and 10⁻⁶ excess cancer risk and the hazard index is less than 1.

A well survey conducted during the RI/FS determined that there is no private well water use for potable supply within the area potentially affected by the site. Since public water is available at the site, there is no reasonably expected future potable use of site-affected groundwater. In addition, alternative GW-3 of the Proposed Plan includes the requirement for institutional controls to prevent exposure to groundwater contamination.

Restore ground water to beneficial use such that PRGs are met for the aquifer at actual 6. points of exposure and at potential points of exposure, if feasible.

Based on the groundwater modeling contained in the FS, groundwater alternative GW-3, coupled with soil alternative S-4, is projected to achieve groundwater cleanup goals as rapidly as any of the alternative combinations evaluated in the FS.

7. Eliminate, reduce, or control risks arising from exposure to contaminants in ground water.

As discussed above, risks arising from exposure to contaminants in groundwater are hypothetical in nature. Nonetheless, risks will be addressed through a combination of 1) capping the source areas to minimize future leaching of contaminants from the soils/sediment to the groundwater, 2) cleaning up the groundwater through natural attenuation, 3) providing institutional controls to prevent exposure to groundwater contamination and 4) conducting the required EPA five-year reviews. All of these beneficial actions are included in the S-4/GW-3 alternatives.

Implement institutional controls such that no unacceptable risk to human health or the 8. environment shall occur through the use of contaminated ground water.

The remedy in the Proposed Plan requires institutional controls to prevent exposure to groundwater contamination. This requirement would also exist if alternatives S-4/GW-3 were selected by EPA. It is noted that potable use of groundwater within the potentially affected area is already substantively restricted by governmental and private use restrictions currently in place (described in Section 3.2.1.2 of the FS).

As discussed above, the S-4/GW-3 combination meets all of the remedial action objectives, is protective of human health and the environment, meets ARARs and is projected to achieve groundwater cleanup goals as quickly as the S-5/GW-3 remedy presented in the Proposed Plan. Considering these facts, EPA should select this remedy (S-4/GW-3) as it is also substantially more Joseph McDowell 2 August 2000 Page 6 of 8

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cost effective than the Proposed Plan remedy (S-5/GW-3). EPA's revised cost estimate for the S-5 alternative is \$11,954,000, while the S-4 alternative is \$7,501,000. This constitutes a difference of \$4,453,000. While the clarifications recently provided by EPA to Tony Bartolomeo will decrease the cost of S-5, it will still cost substantially more than S-4.

The Record of Decision (ROD) Should Include Language Allowing Flexibility During Remedial Design for Land Development Considerations

As a result of the commercial land redevelopment activities underway the site, EPA should consider issuing the ROD with language that would both acknowledge the land development program and provide the flexibility needed during the remedial design to insure that the remedy is implemented in a manner that is consistent with the land development plans, while still fulfilling the remedial action objectives for the site.

With respect to Quarries 1 and 2, we understand that EPA has expressed its willingness to implement the capping in a manner that complements the office complex development plans for these areas. Specifically, we understand that EPA agrees with the use of asphalt parking areas or similar paved area use (without multimedia caps) to cap Quarries 1 and 2, as long as the asphalt meets any Pennsylvania ARAR for asphalt capping. This decision is technically appropriate since the primary goals for capping these areas are to 1) prevent direct contact with underlying contaminated soil/sediment, 2) prevent unacceptable leaching of contaminants from the soil/sediment into the groundwater, and 3) implement this capping in a manner that least impacts the ongoing development of the land. Asphalt capping alone, without multimedia cap design layers, would be fully adequate to prevent direct contact with the underlying soils and would serve as an effective low permeability barrier to maximize runoff, which in turn would minimize leaching from the underlying soils/sediments. Asphalt capping also allows more flexibility from the perspective of potential design changes for future development and would greatly facilitate any repairs or intrusive additions that might need to be made to the capped areas. Asphalt pavement can be readily tied in to a building that may be constructed over some portion of the capped areas. However, constructing a building over an area containing a multimedia cap would be problematic at best.

Other "affected areas" that have been identified in the FS (e.g., the WAL pipeline between Quarry 3 and Renaissance Boulevard; a portion of a swale between Quarry 3 and Quarry 4; Area 6) have either already been addressed (removal of impacted soils in Area 6) or will likely have to be addressed as part of the office park development. Those "affected areas" that have not already been addressed, as well as any other affected areas that may be identified at the site, would be most effectively handled during the remedial design process, in consideration of the most up-to-date land development plans and the remedial action objectives for the site.

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Finally, with respect to Quarry 3, as discussed in the previous comment, we believe EPA should select Alternative S-4, which calls for installing a multimedia cap over Ouarry 3 (without removal of soils or sediment). However, should EPA, after reviewing the comments on the Proposed Plan and reassessing the proposed remedy, still believe that S-5 is the appropriate remedy for soils, we suggest that EPA remain flexible on the final completion and use of the Quarry 3 area. As currently stated in the Proposed Plan, under Alternative S-5, the excavated areas are to be filled with clean soil and graded for proper drainage. Although this sounds straightforward, in fact, this would require a massive amount of soil (over 170,000 tons) to be transported to the site. Other ideas for Ouarry 3 that would reduce the volume of soil needed at the site and fit with the development plans for the site should also be considered. Language should be included in the ROD allowing the evaluation of these other ideas as part of the remedial design phase. We therefore suggest that the following paragraph might be added to the ROD to preserve this flexibility:

"The precise nature of the cover for Quarry 3 following removal will be determined during the remedial design phase and may be integrated with plans for development of the Site. This will also be true of the treatment of other affected areas, such as the areas of the pipeline route or affected soils that have not already been removed and/or remediated and where investigation shows additional remedial action is warranted."

In closing, we hope that EPA thoughtfully considers the comments provided in this letter and modifies the remedy contained in the PRAP accordingly.

Should you have any questions regarding these comments, please do not hesitate to contact either one of us at (865) 691-5052.

Respectfully,

de maximis, inc.

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Millon Williams

Rodney Sutch

RWS/mw

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